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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,396

05/11/2005

Matthias Schulist

4114-15

6718

23117 7590 04/18/2008  
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EXAMINER

THIER, MICHAEL

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

04/18/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/529,396	<b>Applicant(s)</b> SCHULIST, MATTHIAS	
	<b>Examiner</b> MICHAEL T. THIER	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 10-12 and 14-18 is/are rejected.
- 7) ☒ Claim(s) 6, 8, 9 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/28/2005</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 3/08/2005 has been entered and considered by the examiner.

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 14-15 are rejected under 35 U.S.C. 101 because they are drawn to a “program” per se as recited in the preamble and as such is non-statutory subject matter. See MPEP 2106.IV.B.1.a. Data structures not claimed as embodied in computer readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claim aspects of the invention, which permit the data structure's functionality to be realized. In contrast, a claimed computer readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory. Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs are not physical “things.” They are

neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. Claim 14 would need to be worded as follows (i.e. or in a similar form):

A computer readable medium, encoded with a computer program product, that when executed performs the steps...

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4-5, 7, 10 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu (US 6876694) in view of Isaksson et al. (US 6493395).

**Regarding claims 1 and 14-16.** A method and receiver for evaluating a code which is orthogonal to one or more further codes (title and abstract), comprising the steps of:

receiving a signal which carries a code containing a sequence of code symbols;  
(column 3 lines 10-12 and column 4 lines 37-39)

determining for a code symbol at a particular symbol instant at least one channel

estimate; (column 3 lines 19-22)

determining for the code symbol a compensation value taking into account the at least one channel estimate; (column 3 lines 23-27)

restoring a previous power relationship among the individual code symbols contained in the code by compensating each code symbol using the compensation value determined for the corresponding symbol instant; (column 3 lines 23-27, column 4 lines 44-49).

evaluating the code on the basis of the sequence of compensated code symbols (column 4 lines 1-13)

However, Komatsu does not specifically disclose the idea of evaluating the code on the basis of the sequence of compensated code symbols exploiting the orthogonality to the further codes.

Isaksson teaches a system using orthogonal carriers (abstract). He teaches the idea of evaluating the code on the basis of the sequence of compensated code symbols exploiting the orthogonality to the further codes in column 2 lines 28-32. The idea of having orthogonality between carriers and codes is a well known idea to avoid interference (i.e. as explained by Isaksson to avoid influence of neighboring carriers.)

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to utilize the teachings of Isaksson with the teachings of Komatsu. The motivation for doing so would have been to allow for avoiding, or minimizing interference (Isaksson column 2 lines 30-32).

**Regarding claim 4.** Komatsu further teaches wherein the signal carrying the

code is received via multiple propagation paths, wherein for the particular symbol instant individual channel estimates for at least two propagation paths are determined and wherein the compensation value for the particular symbol instant is determined taking into account the individual channel estimates determined for this symbol instant. (column 3 lines 10-12 and 19-22, and column 4 lines 43-48)

**Regarding claim 5.** Komatsu further teaches wherein in the compensation value weak propagation paths are considered with a lower significance than strong propagation paths. (column 4 lines 45-48)

**Regarding claim 7.** The idea wherein the code is used in an access signaling context to identify or address a particular network component requesting access to a network resource is an obvious and well known technique in the art of wireless communications. The idea of identifying the network component requesting access by a code within the signal is obvious and the examiner thus takes official notice.

**Regarding claim 10.** Komatsu further teaches wherein the step of determining channel estimates comprises averaging for a specific propagation path each channel estimate over a number of symbol instants. (column 3 lines 10-12)

**Regarding claim 17.** Komatsu further teaches wherein the receiver is configured as a RAKE receiver. (figure 1 item 11)

**Regarding claim 18.** Komatsu further teaches wherein the compensator is configured to generate a maximum ratio combined output signal.(column 3 lines 1-4, i.e. the apparatus estimates and compensates more accurately (i.e. thus maximum ratio)

the transmission channel (or output signal))

6. Claims 2-3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the grounds of rejection as applied to claim 1 above, and further in view of Salehi et al. (US 2003/0137956)

**Regarding claim 2.** Komatsu and Isaksson teach the limitations of the previous claim.

However, they do not specifically disclose wherein the step of evaluating the code comprises determining if the received code is identical with a known code and/or which code out of a predefined set of orthogonal codes has been received.

Salehi teaches a method and system for evaluating codes in par. 10. He teaches that the idea of comparing the received code to known codes in par. 10.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to utilize the teachings of Salehi with the teachings as in the combination of Isaksson and Komatsu. The motivation for doing so would have been to allow for synchronizing the transmitter and receiver (Salehi par. 3)

**Regarding claim 3.** Salehi further teaches wherein the step of evaluating the code comprises associating the sequence of compensated code symbols with one or more known sequences of code symbols. (par. 10)

**Regarding claim 12.** Salehi further teaches wherein the step of evaluating the code comprises a comparison with a threshold. (par. 10)

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the grounds of rejection as applied to claim 1 above, and further in view of Sung (US 7035315).

**Regarding claim 11.** Komatsu and Isaksson teach the limitations of the previous claim.

However, they do not specifically disclose wherein the step of determining channel estimates comprises a Doppler shift adaptation of the channel estimates.

Sung teaches this idea in column 3 lines 30-34.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to utilize the teachings of Sung with the teachings as in the combination of Isaksson and Komatsu. The motivation for doing so would have been to allow for removing the Doppler frequency shift in an optimum and realizable manner. (Sung column 1 lines 47-49)

#### ***Allowable Subject Matter***

8. Claims 6, 8, 9, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



Art Unit: 2617

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL T. THIER whose telephone number is (571) 272-2832. The examiner can normally be reached on Monday thru Friday 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. T. T./  
Examiner, Art Unit 2617  
4/15/2008

/Duc Nguyen/

Supervisory Patent Examiner, Art Unit 2617